

Rolf Drechsler • Mathias Soeken

Editors

Advanced Boolean Techniques

Selected Papers from the 13th International
Workshop on Boolean Problems



Springer

Contents

1	Self-explaining Digital Systems: Technical View, Implementation Aspects, and Completeness	1
	Görschwin Fey and Rolf Drechsler	
2	Secure Implementation of Lattice-Based Encryption Schemes	21
	Tobias Oder, Tobias Schneider, and Tim Güneysu	
3	Derivative Operations for Classes \mathcal{C}_N of Boolean Functions	51
	Bernd Steinbach and Christian Posthoff	
4	Towards the Structure of a Class of Permutation Matrices Associated with Bent Functions	83
	Radomir S. Stanković, Milena Stanković, Jaakko T. Astola, and Claudio Moraga	
5	Improving SAT Solving Using Monte Carlo Tree Search-Based Clause Learning	107
	Oliver Keszocze, Kenneth Schmitz, Jens Schloeter, and Rolf Drechsler	
6	Synthesis of Majority Expressions Through Primitive Function Manipulation	135
	Evandro C. Ferraz, Jeferson de Lima Muniz, Alexandre C. R. da Silva, and Gerhard W. Dueck	
7	Literal Selection in Switching Lattice Design	159
	Anna Bernasconi, Fabrizio Luccio, Linda Pagli, and Davide Rucci	
8	Exact Synthesis of ESOP Forms	177
	Heinz Riener, Rüdiger Ehlers, Bruno de O. Schmitt, and Giovanni De Micheli	
9	An Algorithm for Linear, Affine and Spectral Classification of Boolean Functions	195
	D. Michael Miller and Mathias Soeken	

**10 New Results on Reversible Boolean Functions Having
Component Functions with Specified Properties..... 217**
Paweł Kerntopf, Krzysztof Podlaski, Claudio Moraga,
and Radomir Stanković

**11 Efficient Hardware Operations for the Residue Number
System by Boolean Minimization 237**
Danila Gorodecky and Tiziano Villa

Index..... 259